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(56) Documents Cited
GB 1042434 A **GB 0928046 A** **WO 94/17723 A1**
WO 94/17722 A1

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INT CL^6 **A47L 5/24 5/28 7/00 9/00 9/10 9/12 9/16 9/18 11/20 11/34 11/40**
ONLINE:WPI

(54) Abstract Title
Wet or dry vacuum cleaner

(57) A vacuum cleaner comprising a cleaning implement (70) carried by a body (10) together with a source of suction (20) is provided with two interchangeable collection containers adapted to be mounted alternatively in a recess formed in the body so as to enable the cleaner to be used either in a wet-mode or in a dry-mode.

The collection container (40), for use in the wet mode, includes the separator unit (50) which comprises a tube (51) forming an extension of the suction tube (45), with a baffle wall (54) over the open mouth thereof, and additionally an oblique annular baffle plate (46) may be provided in the vicinity of the junction between the two tubes (45,51).

The collection container (60), for use in the dry mode (Fig 2, not shown), includes a separator unit (65) which comprises a mounting ring (67) carrying a tubular filter element (66), the lower end of which is closed by a baffle plate (68) which registers with the open end (63a) of the inlet tube (63) in spaced relation thereto.

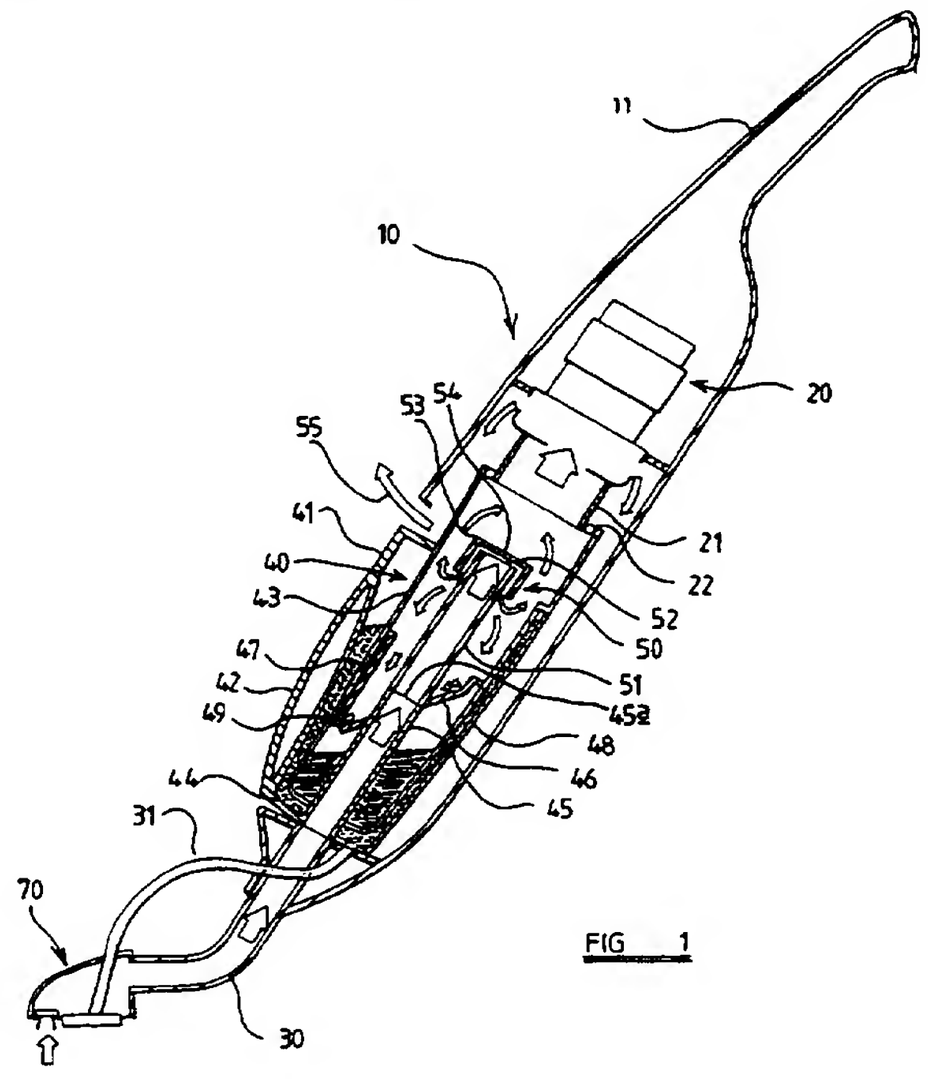

FIG 1

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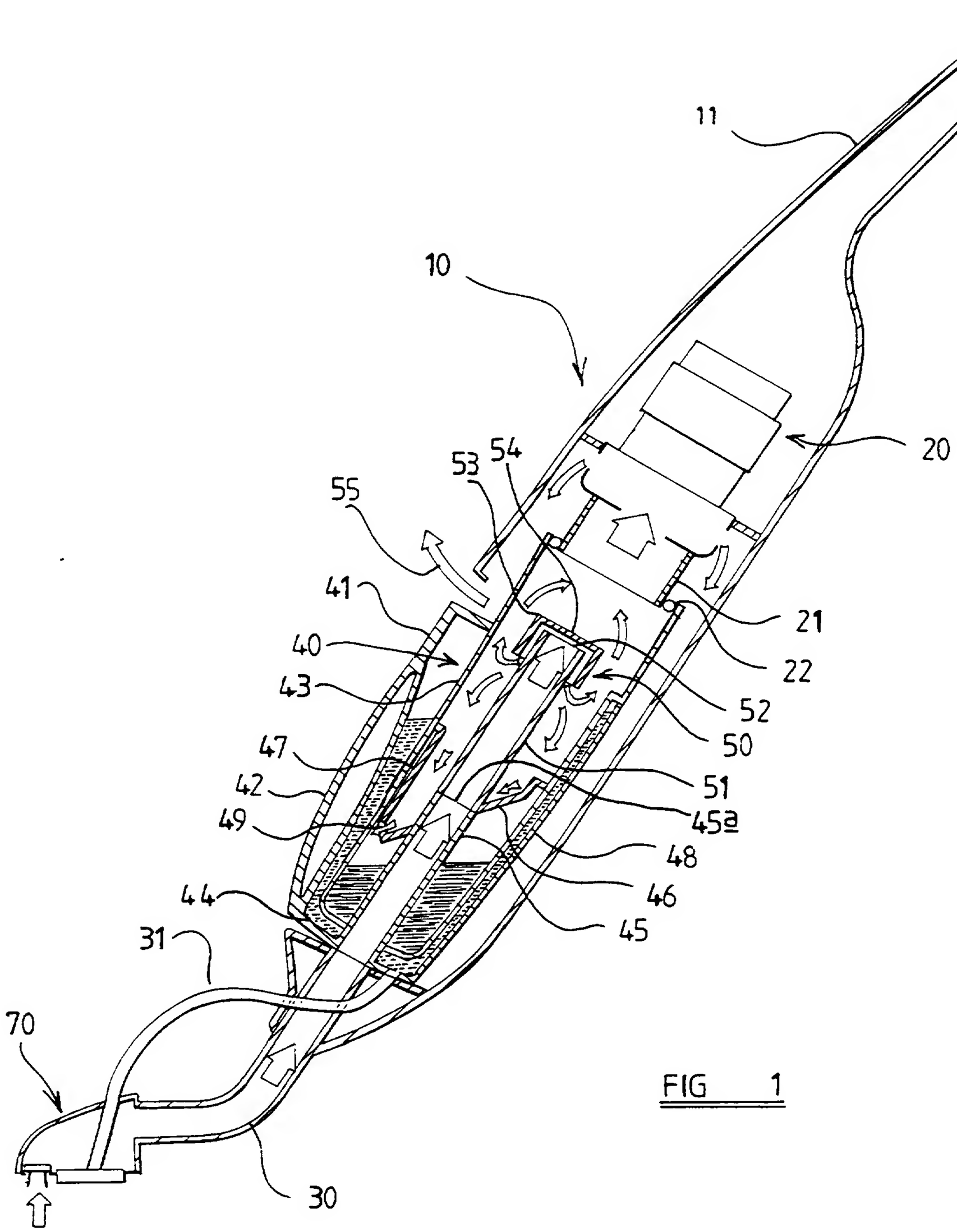
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FIG 1

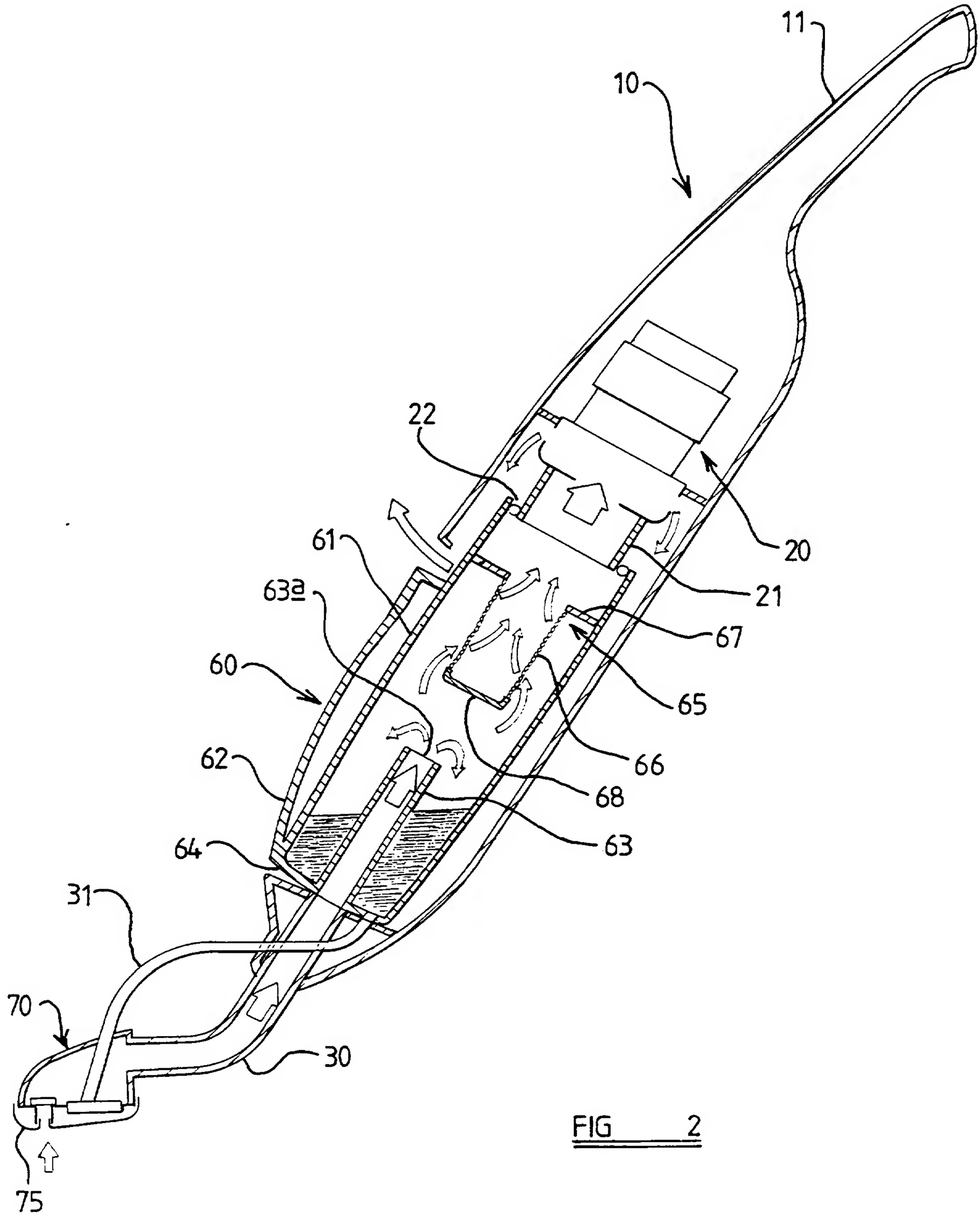

FIG 2

PATENTS ACT 1977

GDH/PJ/A9093GB

Title : "Apparatus for cleaning floors, carpets and the like"

Description of the invention

This invention relates to apparatus for cleaning floors, carpets and the like and is more particularly concerned with a dual purpose apparatus suitable for both dry suction cleaning ("vacuum" cleaning) and for wet process cleaning operations involving the application and removal of a liquid. Such apparatus is sometimes known as a "three-in-one" appliance since, in addition to performing normal dry vacuuming operations and wet cleaning operations, it can also be used simply for drying floors or picking up spillages.

Many designs have been proposed for such dual purpose appliances, but the concept of interchangeability between wet and dry modes of operation has successfully been applied only in the context of vacuum cleaners of the so-called "canister" type in which a cleaning implement to which suction is applied is connected to a source of suction within a body of the appliance by means of a flexible hose. In general, the body of appliances of the canister type can be made relatively large and, indeed, heavy because, whilst it is mobile (on castors or the like) it is not required to be moved constantly back and forth by the user.

However, an alternative form of vacuum cleaner which is in common use is the so-called "upright" type in which a main cleaning implement is carried by a body of the appliance together with a source of suction so that the appliance as a whole is normally required to be moved back and forth by the user. Thus, different constraints on size and weight apply in the case of vacuum cleaners of the upright type, and for this reason it has not previously been possible to provide a commercially successful cleaner of the upright type which is capable of operating in both wet and dry modes.

In our British Patent specifications 1601456 and 2038168 there are disclosed two vacuum cleaners of the canister type in which a reservoir assembly for a cleaning liquid and a filter assembly for the separation of dry dust are interchangeably assembled between a source of suction and a collection container

which is thereby adapted for either wet or dry operation. Thus the main body of the appliance in either mode of operation comprises three sections which are releasably clipped together, the central section comprising either of the two interchangeable sections. Such an arrangement is generally satisfactory for vacuum cleaners of the canister type because they stand stably on the floor and the user can use two hands to manipulate the various components as necessary without undue difficulty.

Whilst, theoretically, such a three-section construction could be adopted for a vacuum cleaner of the upright type, in practice this has a number of disadvantages to the user in particular.

Even where the upright cleaner is of the kind which includes a base member, in which the main cleaning implement and motor/impeller unit are located, with a swivellably connected handle portion carrying the collection container, so that the appliance as a whole can stand stably on the floor with the handle assembly in an upright position, the appliance is generally less stable than a cleaner of the canister type, partly because of its greater height and partly because of the swivellable connection between the handle assembly and the base member, so that manipulation of interchangeable sections to convert from wet to dry mode may be difficult. The difficulties would be even greater with a vacuum cleaner of the so-called "stick" type in which the cleaning implement is not incorporated in a base member whereby the appliance as a whole can stand in a stable manner on the floor.

Our International Patent specifications WO94/17722 and WO94/17723 disclose an appliance of the stick type in which the collection container is removably housed within a recess formed in a body of the appliance, but without any provision for conversion between wet and dry modes of operation, the collection container being removably coupled at its upper end to an air/liquid separator disposed non-removably within the body of the appliance.

Accordingly, it is an object of the present invention to provide a vacuum cleaner generally of the upright type (which term includes the stick type) which is adapted for operation selectively in wet and dry modes.

According to the present invention we provide a vacuum cleaner of the kind comprising a cleaning implement which is carried by a body of the appliance together with a source of suction, the body having a recess adapted to receive selectively one of two interchangeable first and second collection containers releasably through an opening formed at one side of the body, wherein each of said collection containers includes a suction passage which extends upwardly from the base of the container and terminates in an outlet at a position within the container and is releasably connectable at the base of the container to a suction duct connected with said cleaning implement, connection means at the upper end of the collection container for releasable connection to a source of suction within the body to establish suction at said cleaning implement and air flow from said implement through said duct and said passage to said source of suction, and a respective separator unit within the collection container, one of said separator units being a wet-mode separator unit which is connected at the outlet of said suction passage of said first collection container and operates to separate entrained liquid droplets from the air-flow thereby enabling said first collection container to be used for the collection of liquid, and the other of said separator units being a dry-mode separator unit which is to be mounted within said second collection container at a position spaced from the outlet of said suction passage and operates to separate dry material entrained in the air-flow thereby enabling said second collection container to be used for the collection of dry matter.

The wet mode separator unit of said first collection chamber may comprise a tube, forming in use an extension of said suction passage in the collection container, and having an outlet opening in register with a transversely disposed baffle which serves to reverse the direction of air flow and function as an air/liquid separator within said first collection container. Preferably the

suction passage is disposed centrally within said first collection container, the tube also being disposed centrally of the collection container.

The baffle is preferably formed with a generally cylindrical skirt which extends over, and in spaced relation to, an end portion of said tube, said skirt being spaced inwardly from the side wall of said first collection container.

Desirably, said first collection container also includes an obliquely inclined annular baffle plate which is arranged to extend across the collection container. The annular baffle plate may be carried by an oblique end face at the lower end of a tubular wall which is removably located within said first collection container.

The dry mode separator unit of said second collection container may comprise a filter element disposed within the collection container between the outlet of said suction passage and said connection means at the upper end of the second collection chamber.

The filter element may be carried by a mounting ring which is removably mounted within, and sealingly engages against, the side wall of said collection container, and may be of tubular form and at the end thereof remote from said mounting ring is closed by a baffle plate which, in use, is in register with and spaced from the outlet of said suction passage in said second collection container.

The invention further resides in a collection container for use with a vacuum cleaner of the kind comprising a cleaning implement which is carried by a body of the appliance together with a source of suction, the body having a recess adapted to receive the collection container releasably through an opening formed at one side of the body, wherein the collection container comprises a suction passage which extends upwardly from the base of the container and terminates in an outlet at a position within the container and is releasably connectable at the base of the container to a suction duct in the cleaner, said suction duct being connected with said cleaning implement, connection means at the upper end of the collection container for releasable connection to said source

of suction within the body of the cleaner to establish suction at said cleaning implement and airflow from said implement through said suction duct and said suction passage to said source of suction, and a separator unit connected at the outlet of said suction passage and adapted to function as an air/liquid separator operating to separate entrained liquid droplets from the air flow to enable the cleaner to be operated in a wet mode in which said collection container serves to collect liquid picked up by said cleaning implement.

The invention also resides in a vacuum cleaner having such a collection container releasably assembled therewith.

The invention further resides in a collection container for use with a vacuum cleaner of the kind comprising a cleaning implement which is carried by a body of the appliance together with a source of suction, the body having a recess adapted to receive the collection container releasably through an opening formed at one side of the body, wherein the collection container comprises a suction passage which extends upwardly from the base of the container and terminates in an outlet at a position within the container and is releasably connectable at the base of the container to a suction duct in the cleaner, said suction duct being connected with said cleaning implement, connection means at the upper end of the collection container for releasable connection to said source of suction within the body of the cleaner to establish suction at said cleaning implement and airflow from said implement through said suction duct and said suction passage to said source of suction, and a separator unit mounted within the collection container at a position spaced from the outlet of said suction passage and adapted to function as a solid matter separator to enable the cleaner to be used in a dry mode, operating to separate solid material entrained in the airflow so that said collection container serves to collect dry matter picked up by said cleaning implement.

The invention further resides in a vacuum cleaner having such a collection container assembled therewith.

These and other features of the invention will now be described by way of example with reference to the accompanying drawings wherein:-

FIGURE 1 shows one embodiment of vacuum cleaner in accordance with the invention set up in a wet mode with a first collection container in place; and

FIGURE 2 shows such cleaner set up in a dry mode with a second collection container in place.

A suction cleaner embodying the present invention, as illustrated in Figures 1 and 2 by way of example, includes a body 10 which defines a housing for various operative components, including a motor/impeller unit 20 which provides a source of suction to draw air through a suction duct 30 and into one of two removable collection containers 40 and 60 which is housed in a recess provided within the body 10.

The body 10 is formed to afford a handle assembly 11 at its upper end and, at its lower end, carries a suction head 70 of any convenient form. It will be understood that such head may, as in the illustrated embodiment, have provision for applying a cleaning liquid as hereinafter described, and that the head 70 may be mounted for swivelling movement relative to the suction duct 30 about a generally horizontal axis extending either in the fore-and-after direction or in a transverse direction.

In the illustrated embodiment, the first collection container 40 comprises an outer body 41 of generally jug-like form having an integral handle 42 on the wall thereof which in use is outside relative to the recess in the body within which the container 40 is received.

As shown in Figure 1, the outer body 41 of the first container 40 serves as a reservoir compartment for clean water (normally containing a detergent or the like) which can be delivered to the suction head 70 by means of a liquid delivery pipe 31 which is releasably connected to the lower end of the outer body 41, desirably with the interposition of valve means (not shown) whereby the flow of liquid to the cleaning head can be regulated.

The first container 40 further comprises an inner compartment 43 which extends upwardly beyond the upper end of the outer body 41 and at its upper end is adapted to engage sealingly with an intake duct 21 of the motor/impeller unit 20, for example by means of an interposed sealing ring 22.

The inner compartment 43 is adapted to collect material picked up by the suction head 70 and conveyed along suction duct 30. For this purpose, the inner compartment 43 of the first container 40 includes a suction passage comprising a central suction tube 45 which extends upwardly from the base 44 of the outer body 41 and through the base of the inner compartment 43 and terminates in an outlet 45a at a position approximately one third of the way up the height of the inner compartment 43. At its lower end, the tube 45 is releasably connectable to the suction duct 30 in any convenient manner.

The inner compartment 43 of the first collection container 40 is provided with a separator unit 50 of a kind adapted to separate liquid droplets entrained in the air flow from the suction head 70.

The wet-mode separator unit 50 comprises a tube 51 which is releasably connectable at the upper end of the suction tube 45 so as to form an extension thereof. At its outer end 52 the tube 51 carries a cap 53 which includes an end wall 54 of greater diameter than the tube 51, in register with, and spaced from, the outlet end 52 of the tube 51 to serve as a baffle, and a circumferential skirt 55 which overlaps with an end portion of the tube 51 in spaced relation therefrom, whilst also being spaced from the side wall of the inner compartment 43 as shown in Figure 1. Thus, in use air with liquid droplets entrained is drawn from the suction head 50, through the suction duct 30, tubes 45 and 51, and undergoes a sharp reversal of flow within the cap 53, in a manner which efficiently separates liquid droplets before the air flow is again reversed and drawn into the intake duct 21 of the motor/impeller assembly 20. Liquid separated from the air flow can then drain downwardly into the base of the inner compartment 43.

Preferably, the inner compartment 43 also includes an obliquely disposed annular baffle plate 46 which assists in retaining collected liquid in the base of the inner compartment as the apparatus is moved back and forth.

In the illustrated embodiment, the baffle plate 46 is provided at an oblique end face of an upwardly extending tubular wall 47 which terminates at its upper end in an outwardly directed flange 48 which engages the inner faces of the side walls of the inner compartment, an outlet aperture 49 being formed at the lowest point of the baffle plate 46 at its junction with the wall 47 to allow liquid to be discharged into the base portion of the inner compartment. The baffle plate is arranged so that the aperture 49 is positioned against the side of the inner compartment which is uppermost when the appliance is in use. The baffle 46 prevents spillage of collected liquid into the part of the compartment above the baffle plate if the appliance is laid down and minimises sloshing of the collected liquid due to back and forth movement of the appliance in use. An upwardly extending outlet tube (not shown) may be provided at the uppermost point of the baffle plate 46, diametrally opposed to the aperture 49, to enable the contents of the inner compartment 43 to be emptied without removing the baffle plate assembly, such outlet tube normally being closed at the upper end by means of a suitable removable stopper.

The assembly of baffle plates 46, tubular wall 47 and flange 48 may be removably located within the inner compartment 43 so as to facilitate emptying and cleaning of the latter after use.

The baffle plate 46 may be secured to, and carried by, the tube 51 of the separator unit 50 so as to form an effectively permanent part thereof, in which case it may be disposed nearer to the cap 53 than illustrated so as to increase the available volume of the inner compartment 43 beneath the baffle plate 46. In other embodiments, the baffle plate 46 may be releasably assembled with the tube 51, or with the suction tube 45 of the collection container 40.

In an alternative arrangement, the tubular wall 47 and flange 48 may be omitted so that the baffle plate 46 then engages around its periphery directly

with the internal face of the inner compartment 43, except where the aperture 49 is required.

As described above, the first collection container 40 incorporates a reservoir from which a cleaning liquid may be dispensed as required. However, it would be possible for the inner compartment 43 to be omitted where cleaning by the application of liquid is not required, the outer body 41 then serving directly to collect liquid so that the appliance then serves only to pick up liquid when the first, wet mode, collection container is in use.

For operation of the cleaner 10 in the dry mode, the first, wet-mode, collection container 40 is removed and second, the dry-mode, collection container 60 is inserted in its place as shown in Figure 2. The second collection container 60 comprises a body 61 of generally jug-like form with an integral handle 62 and a suction passage comprising a central suction tube 63 which extends upwardly from the base 64 of the second collection container 60. The second collection container 60 is provided with a separator unit 65 which may essentially comprise any suitable form of filter element. In the illustrated embodiment a tubular filter element 66 is carried by a mounting ring 67, and the lowermost end of the filter element is closed by a baffle plate 68, on which air emerging from the tube 63 impinges so as to cause flow-reversal and to assist the separation of coarser particles before the air stream passes through the filter material which removes finer particles. However, it will be appreciated that other forms of filter may be employed if desired. Separated dust and other matter falls to the bottom of the body 61 of the second collection container 60 as shown, and the container 60 as a whole can be removed laterally from the recess in the housing for emptying as required.

When the dry-mode separator unit 60 is in use, the suction head 70 may be exchanged in known manner for a suction head of known type adapted for the pick-up of dry matter. Alternatively the suction head 70 may be converted for use as a dry matter pick-up head by means, for example, of an adaptor 75 in

the form of a cover plate as described and claimed in our British Patent Application No. 9603250.3

CLAIMS:-

1. A vacuum cleaner of the kind comprising a cleaning implement (70) which is carried by a body (10) of the appliance together with a source of suction (20), the body having a recess adapted to receive selectively one of two interchangeable first and second collection containers (40;60) releasably through an opening formed at one side of the body, wherein each of said collection containers (40;60) includes a suction passage (45;63) which extends upwardly from the base of the container (40;60) and terminates in an outlet (45a) at a position within the container and is releasably connectable at the base of the container to a suction duct (30) connected with said cleaning implement (70), connection means (21;22) at the upper end of the collection container (40;60) for releasable connection to said source of suction (20) within the body (10) to establish suction at said cleaning implement (70) and air flow from said implement through said duct (30) and said suction passage (45;63) to said source of suction (20), and a respective separator unit (50;65) within the collection container (40;60), one of said separator units being a wet-mode separator unit (50) which is connected at the outlet (45a) of said suction passage (45) of the first collection container (60) and operates to separate entrained liquid droplets from the air-flow thereby enabling said first collection container (40) to be used for the collection of liquid, and the other of said separator units (65) being a dry-mode separator unit which is mounted within the second collection container (60) at a position spaced from the outlet (63a) of said suction passage (63) and operates to separate dry material entrained in the air-flow thereby enabling said second collection container (60) to be used for the collection of dry matter.

2. A vacuum cleaner according to Claim 1 wherein the wet-mode separator unit (50) of the first collection container (40) comprises a tube (51), forming in use an extension of said suction passage (45) in the first collection container (40), and having an outlet opening (52) in register with a transversely

disposed baffle (54) which serves to reverse the direction of air flow and function as an air/liquid separator within the first collection container (60).

3. A vacuum cleaner according to Claim 2 wherein said suction passage (45) comprises a tube (45) disposed centrally within said first collection container (40), tube (51) of the wet-mode separator (50), likewise being disposed centrally of said first collection container (40).

4. A vacuum cleaner according to Claim 3 wherein said wet-mode separator unit tube (51) is of substantially circular shape in transverse cross-section and said baffle (53) is of substantially circular shape and of larger diameter than said tube (51).

5. A vacuum cleaner according to Claim 4 wherein said baffle (52) is formed with a generally cylindrical skirt (53) which extends over, and in spaced relation to, an end portion of said tube (51), said skirt (53) being spaced inwardly from the side wall of the collection container (40).

6. A vacuum cleaner according to Claim 2 wherein said first collection container (40) also includes an obliquely inclined annular baffle-plate (46) which is arranged to extend across the first collection container.

7. A vacuum cleaner according to Claim 6 wherein said annular baffle plate (46) is carried by an oblique end face at the lower end of a tubular wall (47) which is removably located within said first collection container.

8. A vacuum cleaner according to Claim 7 wherein said tubular wall (47) is spaced inwardly from the side wall of said first collection container (40) and carries at its upper end a radially outwardly directed flange (48) which engages in sealing relation with the side wall of said collection container.

9. A vacuum cleaner according to Claim 7 or Claim 8 wherein an outlet aperture (49) is provided at or adjacent to the junction between said annular baffle plate (46) and said tubular wall (47) at the lowest part of said oblique end face.

10. A vacuum cleaner according to Claim 1 wherein the dry-mode separator unit (65) of said second collection container (60) comprises a filter element (66) disposed within the second collection container between the outlet (63a) of the suction passage (63) and said connection means (21;22) at the upper end of the second collection container (60).

11. A vacuum cleaner according to Claim 10 wherein said filter element (66) is carried by a mounting ring (67) which is removably mounted within, and sealingly engages against, the side wall of said second collection container (60).

12. A vacuum cleaner according to Claim 11 wherein said filter element (66) is of tubular form and at the end thereof remote from said mounting ring (67) is closed by a baffle plate (68) which, in use, is in register with and spaced from the outlet (63a) of said suction passage (63) in said second collection container (60).

13. A vacuum cleaner according to any one of Claims 1 to 9 wherein said first collection container (40) further comprises a reservoir compartment (41) for cleaning liquid, and means (31) are provided for delivery said liquid to the cleaning head (70).

14. A vacuum cleaner according to Claim 13 wherein said fist collection container (40) comprises an inner compartment (43) in which said wet-mode separator unit (60) is located, and said reservoir comprises an outer compartment

(41), of a jug-like unit which is releasably assemblable with the body (10) of the vacuum cleaner.

15. A collection container (40) for use with a vacuum cleaner of the kind comprising a cleaning implement (70) which is carried by a body (10) of the appliance together with a source of suction (20), the body having a recess adapted to receive the collection container (40) releasably through an opening formed at one side of the body, wherein said collection container (40) comprises a suction passage (45) which extends upwardly from the base (43) of the container and terminates in an outlet (45a) at a position within the container and is releasably connectable at the base of the container to a suction duct (30) in the cleaner, said suction duct (30) being connected with said cleaning implement (70), connection means (21;22) at the upper end of the collection container (40) for releasable connection to said source of suction (20) within the body (10) of the cleaner to establish suction at said cleaning implement (70) and air flow from said implement through said duct (30) and said suction passage (45) to said source of suction (20), and a separator unit (50) connected at the outlet (45a) of said suction passage (45) and adapted to function as an air/liquid separator operating to separate entrained liquid droplets from the air flow to enable the cleaner to be operated in a wet mode.

16. A vacuum cleaner of the kind comprising a cleaning implement (70) which is carried by a body (10) of the appliance together with a source of suction (20), a collection container (40) releasably mounted in said recess and comprising a suction passage (45) which extends upwardly from the base (43) of the container and terminates in an outlet (45a) at a position within the container and is connected at the base of the container to a suction duct (30) connected to said cleaning implement (70), connection means (21;22) at the upper end of the collection container (40) releasably connected to said source of suction (20) within the body (10) to establish suction at said cleaning implement (70) and air flow

from said implement through said duct (30) and said suction passage (44) to said source of suction (20), and a separator unit (50) connected to the outlet (45a) of said suction passage (45) and adapted to function as an air/liquid separator operating to separate entrained liquid droplets from the air flow and enabling the cleaner to be operated in a wet mode in which said collection container (40) serves to collect liquid picked up by said cleaning implement (70).

17. A collection container (60) for use with a vacuum cleaner of the kind comprising a cleaning implement (70) which is carried by a body (10) of the appliance together with a source of suction (20), the body having a recess adapted to receive the collection container (60) releasably through an opening formed at one side of the body, wherein said collection container (60) comprises a suction passage (63) which extends upwardly from the base (64) of the container and terminates in an outer (63a) at a position within the container and is releasably connectable at the base of the container to a suction duct (30) in the cleaner, said suction duct (30) being connected with said cleaning implement (70), connection means (21;22) at the upper end of the collection container (60) for releasable connection to said source of suction (20) within the body (10) of the cleaner to establish suction at said cleaning implement (70) and air flow from said implement through said duct (30) and said suction passage (63) to said source of suction (20), and a separator unit (65) mounted within the collection container (40) at a position spaced from the outlet (63a) of said suction passage (63) and adapted to function as a solid matter separator to enable the cleaner to be used in a dry mode operating to separate solid material entrained in the air flow so that said collection container (60) serves to collect dry matter picked up by said cleaning implement (70).

18. A vacuum cleaner of the kind comprising a cleaning implement (70) which is carried by a body (10) of the appliance together with a source of suction (20), a collection container (60) releasably mounted in said recess and comprising

a suction passage (63) which extends upwardly from the base (64) of the container and terminates in an outlet (63a) at a position within the container and is connected at the base of the container to a suction duct (30) connected to said cleaning implement (70), connection means (21;22) at the upper end of the collection container (60) releasably connected to said source of suction (20) within the body (10) to establish suction at said cleaning implement (70) and air flow from said implement (70) through said duct (30) and said suction passage (63) to said source of suction (20), and a separator unit (65) mounted within the collection container (60) at a position spaced from the outlet (63a) of said suction passage (63) and adapted to function as a solid matter separator to enable the cleaner to be used in a dry mode operating to separate solid material entrained in the air flow so that said collection container (60) serves to collect dry matter picked up by said cleaning implement (70).

19. A vacuum cleaner having interchangeable collection containers and substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

20. A collection container incorporating an air/liquid separator and substantially as hereinbefore described with reference to and as shown in Figure 1 of the accompanying drawings.

21. A collection container incorporating a solid matter separator and substantially as hereinbefore described with reference to and as shown in Figure 2 of the accompanying drawings.

The Patent Office

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Application No: GB 9702984.7 **Examiner:** John Fulcher
Claims searched: 1-21 **Date of search:** 13 March 1997

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): A4F(FFA,FFD,FK,FSCA,FSCW,FSCX,FSLX,FSSB)

Int Cl (Ed.6): A47L 5/24,5/28,7/00,9/00,9/10,9/12,9/16,9/18,11/20,11/34,11/40

Other: Online:-WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	GB 1042434 A (HOOVER) -see figs	
A	GB 0928046 A (HOOVER) -see figs	
A	WO 94/17723 A1 (VAX) -see figs	
A	WO 94/17722 A1 (VAX) -see figs	

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
		E	Patent document published on or after, but with priority date earlier than, the filing date of this application.
&	Member of the same patent family		